REMARKS

The personal interview conducted on December 12, 1995 between Examiner Cunningham and Amy E. Mandragouras and Elizabeth A. Hanley is gratefully acknowledged. Upon reviewing the claim limitations in claims 44-102 submitted September 28, 1995, the Examiner agreed during the personal interview that method claims containing these claim limitations would be more likely to be allowable in this application. Accordingly, Applicants have submitted method claims 103-144 which contain the limitations discussed during the personal interview of December 12, 1995. Applicants further thank the Examiner for the courtesy of several telephonic discussions with Applicants' attorneys, Amy E. Mandragouras and Elizabeth A. Hanley on February 6, 1996, and February 12, 1996 during which the above newly submitted method claims (in particular, claims 103-113) were discussed. In view of these discussions and the remarks which follow herein, Applicants believe that claims 103-144 are allowable.

It is respectfully submitted that the objection and/or rejections of record do not pertain to the newly submitted claims. The cancellation of the previously pending claims is for the purpose of expediting prosecution of the above-identified application and should in no way be construed as an acquiescence to any of the outstanding objections and/or rejections. Applicants reserve the right to pursue these claims in this or another application.

During the telephonic discussions which occurred with the Examiner, it was agreed that Applicants would make the following remarks of record. These remarks are set forth below under the appropriate heading for the Examiner's convenience.

The Claimed Invention Is Based on the Use of Peptides to Treat Allergy

First, Applicants wish to point out that new claims 103-144 are directed to methods of treating allergy in humans in which a therapeutic composition comprising at least one peptide is administered to a human in an amount sufficient to down regulate a protein allergen specific immune response in the human. The claimed allergy therapy requires the use of one or more peptides, each comprising at least one T cell epitope recognized by T cell receptors specific for the protein allergen to which the human is sensitive (independent claims 103, 105 and 108). In another embodiment, the method features the use of at least one peptide which is capable of mimicking a T cell epitope recognized by a T cell receptor specific for a protein allergen (independent claim 110) or is derived from an antigen which is a bystander antigen to the protein allergen to which a human is sensitive (independent claim 112). All of the remaining claims are dependent from one or more of these independent claims.

In addition, for use in the claimed allergy therapy, the peptide has a defined sequence of amino acid residues and are not conjugated to any other molecule. The term "peptide" is defined by Applicants to refer to a defined sequence of amino acid residues which is less than the total amino acid residues which comprises the amino acid sequence of the protein allergen from which the amino acid sequence of the peptide is derived. Accordingly, Applicants' allergy therapy for humans is directed to the use of peptides as opposed to the entire protein allergen or a hapten (i.e., a small functional group that corresponds to a single antigenic determinant, e.g., an organic compound, which can bind to antibody; however, immunization with a hapten will not usually provoke an antibody response).

The Claimed Method Targets The T Cell Component Of Allergy

In Applicants claimed method, therapeutic compositions including one or more peptides, each comprising at least one T cell epitope recognized by T cell receptors specific for the protein allergen to which the human is sensitive, are administered to the human to down regulate the human's allergic response (alternatively, the composition includes at least one peptide which is capable of mimicking a T cell epitope recognized by a T cell receptor specific for a protein allergen or is derived from an antigen which is a bystander antigen to the protein allergen to which a human is sensitive). Thus, Applicants method targets the T cell component of the allergic response to a protein allergen for treatment of allergy in humans.

In contrast, since allergy is an antibody mediated disease, traditional allergy desensitization therapy in humans, which involves repeated injections of allergen in increasing dosage over a prolonged period of time, targets the antibody component of the disease. This treatment is known to result in several immunologic changes associated with the antibody component of the disease such as decreased levels of circulating IgE responsible for initiating Type I allergic responses (e.g., atopic diseases, anaphylaxis, and urticaria), and an increase in IgG antibody against allergen. Accordingly, current allergy therapy for humans modifies the antibody component of the disease.

Furthermore, in the field of allergy therapy for humans, the prior art does not teach or suggest down regulation of a protein allergen specific immune response in humans by administration of peptides which target antigen-specific T cells as a mediator of such disease, such as those peptides being presently claimed. For example, although there have been several publications reporting that antigen-specific T cells can be tolerized in mice by administration of protein antigens, this effect does not result in down regulation of an ongoing antibody response. See e.g., the following references, a copy of which is submitted herewith as Appendices A-G: Tisch, R., et al., *Nature* 366: 72-75

(1993); Burstein H.J., and Abbas, A.K., *J. Exp. Med.* 177: 457-463 (1993); Peterson, J.D., et al., *Eur. J. Immunol.* 23: 46-55 (1993); Romball, C.G., and Weigle, W.O., *J. Exp. Med.* 178: 1637-1644 (1993); Nossal, G.J.V., et al., *Proc. Natl. Acad. Sci. USA.* 90: 3088-3092 (1993); Lussow, A.R., and MacDonald, H.R., *Eur. J. Immunol.* 24: 445-449 (1994). In one study with humans, T cell tolerance was reported to result, but no effect on antibody levels was found, see Husby, S., et al., *J. Immunol.* 152: 4663-4670 (1994).

Species Election

In paper No. 18, the Examiner required an election of species for claims 44-102 for examination purposes as follows:

(1) election of a therapeutic composition comprising a single distinct species of peptide, such as one of those enumerated in claims 71-74 and select a peptide with a specific length (claims 47-48);

(2) election of a method based upon the use of the above elected therapeutic composition; and

(3) election of the route, dosage and mode (timing) of administration of the selected therapeutic composition (claims 81 and 86-93).

As previously stated herein, upon reviewing the claim limitations in claims 44-102, the Examiner agreed that method claims containing these claim limitations would be more likely to be allowable in this application. Accordingly, Applicants have canceled claims 44-102 and submitted method claims 103-144 which contain limitations discussed during a personal interview with the Examiner.

For purposes of being responsive to the species election, Applicants hereby elect the following species for examination:

(1) a method of treating allergy in humans comprising administering to a human at least one therapeutic composition comprising at least one peptide comprising at least one T cell epitope recognized by a T cell receptor specific for a protein allergen of the genus *Felis*, *Fel d* I (claims 122 and 123; corresponding to original claims 71 and 72), wherein the peptide comprises less than 50 amino acid residues (see e.g., claim 104; corresponding to original claim 47); and

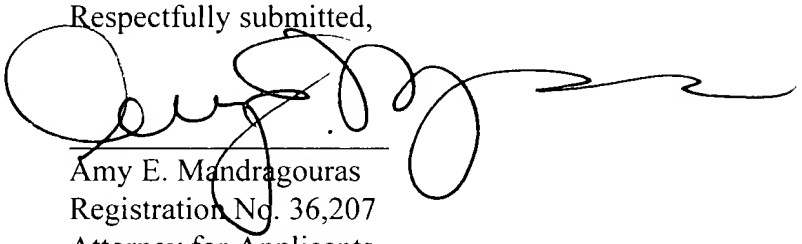
(2) subcutaneous administration (see e.g., claim 131 and 132; corresponding to original claims 81 and 84) and the method comprises administering an initial treatment of three to six dosages of said composition over a period of no more than 6 weeks (see e.g., claim 134; corresponding to original claim 86).

It is Applicants' understanding that the species election is for examination purposes only and upon a finding of allowability of the elected species, the remaining species also will be searched and examined.

CONCLUSION

Reconsideration of the rejections and allowance of claims 103-144 is respectfully requested. If a telephone conversation with Applicants' Attorney would expedite prosecution of the above-identified application, the Examiner is urged to call Applicants' Attorney at the number listed below.

Respectfully submitted,



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